

REMARKS

Reconsideration of the present application is respectfully requested in view of the following remarks. Prior to entry of this response, claims 31-50 were pending in the application, of which claims 31 and 34 are independent. In the Office Action dated December 2, 2004, claims 31-33 and 38-50 were rejected under 35 U.S.C. § 112, second paragraph, claims 31-33 and 46-51 were rejected under 35 U.S.C. § 112, first paragraph, and claims 31-50 were rejected under U.S.C. § 103(a). Following this response, claims 31-50 remain pending in this application. Applicants hereby address the Examiner's rejections in turn.

I. Rejection of the Claims Under 35 U.S.C. § 112, Second Paragraph

In the Office Action, the Examiner rejected claims 31-33 and 38-50 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

The Examiner asserted that the claim term "annular axis," as it appeared in claim 31 prior to the current amendment, was indefinite as to its meaning, stating that the word "annular" means "ring" and that an "axis" is a straight line. Claim 31 has been amended to state: "a distributor body having a substantially annular distribution chamber, the distributor body configured to receive conditioning gas substantially tangentially with respect to the substantially annular distribution chamber." Applicants respectfully submit that the amendment overcomes the rejection based on the claim term "annular axis" and adds no new matter. Support for this amendment is found in the specification at least at page 28, lines 16-21 and 26-29, page 29, lines 20-26, and at Figures 4 and 5.

The Examiner also asserted that claims 38 and 40, as previously written, contradicted each other because claim 38 required that the support collar be “adapted to receive and firmly hold one end of the optical preform or of a mother rod . . .,” while claim 40 requires a resilient seal “allowing the preform or the mother rod to be removed from the interior of the furnace through said support collar without sticking to the seal.” Claim 38 has been amended to recite a “support collar connected to the drawing furnace and adapted to receive and support one end of the optical preform . . .” Applicants respectfully submit that this amendment overcomes the alleged contradiction in claims 38 and 40 as previously presented. Support for this amendment is found in the specification at least at page 31, line 20 through page 32, line 10.

The Examiner also stated that claim 41 is indefinite because it is unclear whether the ratio “2” refers to “2:1” or “1:2” and similarly whether “1.4” means “1.4:1” or “1:4”. Claim 41 has been amended to clearly state that “the ratio of the seal height to the seat height being less than about 2:1, preferably from about 2:1 to about 1.4:1.” Support for this amendment is found in the specification at least at page 33, lines 4-9, which provide an example of a total seal height “H1” to seat height “H2” of 10 mm : 5.8 mm, or 1.72:1, clearly indicating that the ratios detailed in amended claim 41 are supported by the specification as originally filed.

Based on the above amendments and remarks, Applicants respectfully submit that the Examiner’s rejection of claims 31-33 and 38-50 under 35 U.S.C. § 112, second paragraph has been overcome and request that the rejection of those claims be withdrawn.

II. Rejection of the Claims Under 35 U.S.C. § 112, First Paragraph

The Examiner rejected claim 31 under 35 U.S.C. § 112, First Paragraph as failing to comply with the written description requirement, stating that he could find no support in the specification for the term “annular axis.” Because claims 32-33 and 46-50 depend from claim 31, they were also included in the rejection. Applicant has amended claim 31 to state: “. . . a distributor body comprising a substantially annular distribution chamber, the distributor body adapted to receive conditioning gas substantially tangentially with respect to the substantially annular distribution chamber.” The term “annular axis” has been removed – thus, the basis for the Examiner’s rejection has been obviated. Support for this amendment is found in the specification at least at page 28, lines 16-21 and 26-29, page 29, lines 20-26, and at Figures 4 and 5. Accordingly, Applicants respectfully request that this rejection be withdrawn.

III. Rejection of the Claims Under 35 U.S.C. § 103(a)

The Examiner rejected claims 31-39 and 50 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,608,473 to Paek *et al.* (“Paek”) in view of U.S. Patent No. 4,988,374 to Harding *et al.* (“Harding”), U.S. Patent No. 4,678,490 to Miller *et al.* (“Miller”) and Japanese Patent Publication No. 08091862 to Kuwabara Kazuya (“Kazuya”). To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the reference or in the knowledge generally available to one of ordinary skill in the art, to modify the reference, and thus render the claimed invention obvious. MPEP 2142. Further, the prior art reference must teach or suggest all the claim limitations. *Id.* Because the cited combination does not teach or suggest

every limitation of claim 31, the Examiner has not established a *prima facie* case of obviousness.

Amended claim 31 recites “a muffle connected to the upper end of said furnace body, said muffle comprising a mechanical seal for avoiding inlet of ambient air into the furnace.” The Examiner asserts that Paek discloses this limitation of claim 31 with the topmost of the three elements 62 (“upper 62”) disclosed in Figure 3 of Paek. However, upper 62 is not a muffle, but rather is a susceptor tube that is located within the furnace body. Claim 31 clearly distinguishes between the muffle limitation and the separate requirement of a susceptor. Claim 31 requires a “furnace body having an upper end and a lower end and comprising at least a susceptor, an induction coil and an insulating material disposed between said susceptor and said induction coil.” Claim 31 separately requires a muffle that is “connected to the upper end of said furnace body,” thereby indicating that the muffle is not located within the furnace body, but is connected to the upper end of the furnace body. Accordingly, because upper 62 of Paek is not a muffle connected to the upper end of the furnace body, as required by claim 31, but is instead a susceptor tube located within the furnace body, upper 62 does not meet the muffle limitation of claim 31.

Applicants note that U.S. Patent No. 4,030,901 to Kaiser (“Kaiser”), relied on by the Examiner elsewhere in the Office Action, teaches a quartz tube leading into the furnace body. However, whereas claim 31 recites a furnace body comprising a susceptor, Kaiser teaches away from the use of a susceptor entirely. (Kaiser, col. 2,

line 66 – col. 3, line 3).¹ Accordingly, because a prior art reference must be considered in its entirety, including portions that would lead away from the claimed invention (MPEP 2141.02), Kaiser cannot be combined with any of the other cited references as teaching the muffle limitation of Applicants' claim 31. Applicant therefore respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 31, as well as of claims 32-33 and 50, which depend from claim 31 and therefore include each of its limitations, be withdrawn.

The Examiner also rejected claims 34-39 over Paek in view of Harding, Miller and Kazuya. In making an obviousness rejection, "the initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done." MPEP 2142. In regard to claims 34-35, the Examiner simply stated: "Claims 34-35 are clearly met." This bare assertion fails to meet the Examiner's burden in establishing a *prima facie* case of obviousness, particularly in light of the fact that the Examiner relies on four references for this rejection: "A statement of rejection that includes a large number of rejections must explain with reasonable specificity at least one rejection, otherwise the examiner procedurally fails to establish a *prima facie* case of obviousness." MPEP 2142; *Ex parte Blanc*, 13 U.S.P.Q. 2d 1788 (Bd. Pat. App. & Inter. 1989). The Examiner clearly has not stated a ground for the rejection of claims 34 and 35.

Moreover, claim 34 includes a muffle limitation identical to that of claim 31. As discussed in detail above, the Examiner has pointed to nothing in the cited references

¹ It is noted that Kaiser uses the term "muffle tube" to describe a susceptor-like feature, as illustrated by element 18 in Figure 1 of Kaiser and at column 2, lines 43-46, and should not be confused with Applicants' use of the term "muffle."

teaching a muffle connected to the upper end of the furnace body, as claimed in both claim 31 and claim 34. Upper 62 of Paek, relied upon by the Examiner as teaching the muffle limitation of claim 31, does not actually teach Applicants' muffle connected to the upper end of the furnace body, but instead teaches a susceptor tube contained within the furnace body.

Because the Examiner failed to meet the burden of establishing a *prima facie* case of obviousness, Applicants respectfully request that the rejection of claim 34 and 35 be withdrawn. Further, because claims 36-39 also depend from claim 34, and include each of its limitations, Applicants request that these rejections be withdrawn as well.

Applicants further traverse the Examiner's rejection of claim 36 based on the assertion that it would have been obvious to modify the structure of Paek to include finned structures within the outlet because it is well known to use fins to distribute gases and provide adjustability. The Examiner cites no references to support an assertion that it is common knowledge to provide fins to prevent circumferential swirling in an outlet, as accomplished by Applicants' plurality of fins. (Specification, p. 31, ll. 4-6). Moreover, even if the Examiner's assertion that it is common knowledge to provide fins to prevent circumferential swirling in an outlet is supportable, the Examiner does not state why it would have been obvious to modify the cited combination to include the fins known in the art in order to uniformly and forcedly direct conditioning gas in a downward direction towards a furnace body, as required by claim 36.

The Examiner alternatively relied on vanes 34 and 46 of Miller in rejecting claim 36, stating that those structures could be construed as being located within the outlet

because “an outlet is nothingness.” Contrary to the Examiner’s definition, an “outlet” is ordinarily defined as an opening that permits escape or release. Miller clearly indicates that “gas emerges from the blower through circumferential gas outlet port 20.” (Miller, col. 3, ll. 14-16). Reference to Figures 1, 5a and 5g of Miller shows that elements 34 and 46 are not located within outlet port 20, but are clearly located within annular chamber 16, into which air is introduced through gas inlet port 18. (Miller, col. 3, ll. 11-14; col. 4, ll. 10-13; col. 4, ll. 36-39). Accordingly, the Examiner has failed to establish that the “plurality of fins” limitation of claim 36 is taught or suggested by the prior art.

Similarly, Applicants traverse the Examiner’s rejection of claim 37 based on alleged common knowledge combined with Miller. The Examiner failed to support his taking of Official notice that it is well known to use a porous material to help evenly distribute air pressure, or to show a motivation or suggestion to modify the structure of Miller to include such porous material. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness, providing further grounds for the withdrawal of this rejection.

In addition to the Examiner’s failure to establish that the cited references disclose Applicants’ muffle requirement, Applicants further traverse the Examiner’s rejection of claim 38 based on the assertion that element 7 of Harding discloses a support collar as claimed by Applicants. Amended claim 38 requires that the support collar be “connected to the drawing furnace.” Element 7 of Harding is a holding chuck “which gradually advances the preform into the furnace through the furnace entrance 8. (Harding, col. 2, ll. 56-58). Reference to Figure 1 of Harding shows that holding chuck 7 is not connected to the drawing furnace, but instead moves independently of the

furnace. Accordingly, Applicants assert that a *prima facie* case of obviousness has not been established with regard to amended claim 38 and respectfully request that the rejection be withdrawn. Because claim 39 depends from claim 38, the rejection of claim 39 should also be withdrawn.

The Examiner rejected claims 38-45 over Paek in view of Harding, Miller, Kazuya and Kaiser. The Examiner stated that Kaiser teaches the use of a collar to prevent contamination of the fiber, and that it would have been obvious to use the collar of Kaiser to prevent contamination of the fiber. The Examiner does not specifically identify to which element of Kaiser to which he refers, and has therefore failed to meet his burden in identifying how the cited combination teaches or suggests all elements of the claimed invention. However, reference to Kaiser shows that it discloses a silica rubber ring (element 27) through which a preform is inserted, accomplishing sealing of the furnace. However, Kaiser does not teach that rubber ring 27 firmly holds the preform in place. Claim 38 has been amended to more clearly require a support collar that is "adapted to receive and firmly hold one end of the optical preform or a mother rod connected to said preform to guide preform or mother rod to prevent the preform or mother rod from impacting any part of the distributor body during operation of the furnace." Support for this amendment is found in the specification at least at p. 31, line 31 through p. 32, line 3. Because Kaiser does not teach a support collar operative to meet the limitations of amended claim 38, the cited combination does not establish a *prima facie* case of obviousness, and Applicants respectfully request that this rejection be withdrawn. Because claims 39-45 depend from claim 38, the rejection of those claims should also be withdrawn.

The Examiner also rejected claim 41, stating that the ratios included in claim 41 were inappropriate because the seat height cannot be greater than the total seal height. As stated above in regard to the Examiner's 35 U.S.C. § 112 rejections, claim 41 has been amended to correct the problem with the claim as previously presented, and Applicants respectfully submit that amended claim 41 overcomes the Examiner's rejection. The Examiner also cites Applicants' acknowledgement that EnerSeals are known in the art in stating that it would have been obvious to use an EnerSeal for its well-established properties, apparently equating EnerSeals with the requirement of claim 41 that the seal comprise a "seal seat having a seat height, and two opposing seal walls, each of which extend from the seal seat." While Applicants do acknowledge that EnerSeals are known in the art, the limitations of claim 41 distinguish the seal as claimed from the EnerSeals known in the art. At page 32, lines 13 through 25, Applicants describe the problems associated with conventional seals, such as EnerSeals, comprising a top surface including a shallow cavity. At page 32, line 26 through page 33, line 10, Applicants describe how a seal as claimed in claim 41 overcomes the problems with conventional seals such as EnerSeals by providing a seal comprising a seal seat having a seat height, and two opposing seal walls, each of which extends from the seal seat, with the ratio of the total seal height to the seat height being less than about 2:1, and preferably being from about 2:1 to about 1.4:1. Therefore, the cited combination does not teach or suggest the limitations regarding the seal of claim 41, providing further ground for the rejection of claim 41, as well as claims 42-45 which depend from claim 41, to be withdrawn.

VI. Conclusion


In view of the foregoing remarks and amendments, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims. The preceding arguments are based only on the arguments in the Office Action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Office Action. The claims may include other elements that are not shown, taught, or suggested by the cited art. Accordingly, the preceding argument in favor of patentability is advanced without prejudice to other bases of patentability.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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